IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A resource management device in a data processing system, in which at least one bus master is connected to each of a plurality of buses, with each bus master being connected to at least one shared resource via one of the plurality of buses, the resource management device comprising:

~~a bus arbitration section for arbitrating an amount of access to be made from the plurality of buses to the shared resource;~~

an arbitration information management section for managing, as bus arbitration information, a bus priority order which is a fixed priority order among the plurality of buses and a highest access priority pattern which indicates a highest priority in each time slot among the plurality of buses; ~~for ensuring a predetermined access bandwidth to the shared resource for each of the plurality of buses for an arbitration operation by the bus arbitration section; and~~

a bus arbitration section for arbitrating accesses from the plurality of buses to the shared resource based on the bus priority order and the highest access priority pattern; and

a resource control section for controlling~~, based on characteristics of the shared resource,~~ an access to the shared resource from the bus whose access request has been granted by the bus arbitration section,

wherein, in each time slot, if there is an access request from a bus which has the highest priority indicated by the highest access priority pattern, the bus arbitration section grants the bus which has the highest priority an access to the shared resource, and if not, the bus arbitration section determines a bus to be granted access to the shared resource according to the bus priority order.

2. (Original) The resource management device of claim 1, wherein the resource control section includes:

an access control section for analyzing a data transfer protocol of the bus whose access request has been granted by the bus arbitration section and for controlling a data transfer operation between the bus and the shared resource based on the analysis; and

a buffer memory for temporarily storing data to be transferred to or from the shared resource.

3. (Original) The resource management device of claim 1, wherein the arbitration information management section has a function of updating at least one of the bus priority order and the highest access priority pattern of the bus arbitration information.

4. (Original) The resource management device of claim 1, wherein the bus arbitration information is arranged so that different types of access to the shared resource are distinguished from one another.

5. (Original) The resource management device of claim 1, wherein the bus master connected to one of the plurality of buses has a structure in which at least one upper bus master is connected to each of a plurality of upper busses.

6. (Original) The resource management device of claim 1, wherein:

a plurality of bus masters are connected to at least one of the plurality of buses, and the at least one bus includes a bus master arbitration section for arbitrating bus requests from the plurality of bus masters; and

the arbitration information management section further has a function of managing, as bus master arbitration information, a bus master priority order and a highest access priority

pattern for ensuring a predetermined access bandwidth to the shared resource for each of the plurality of bus masters for an arbitration operation by the bus master arbitration section.

7. (Original) The resource management device of claim 6, wherein the arbitration information management section further has a function of managing the bus master arbitration information and the bus arbitration information so as to reflect the requested access bandwidth to the shared resource for each of the bus masters.

8. (Original) The resource management device of claim 6, wherein each bus master or each bus is assigned a highest priority order at regular intervals by the highest access priority pattern.

9. (Original) The resource management device of claim 6, wherein each bus master or each bus is assigned a highest priority order consecutively by the highest access priority pattern.

10. (Original) The resource management device of claim 6, wherein each bus master or each bus is assigned a highest priority order randomly by the highest access priority pattern.

11. (Original) The resource management device of claim 6, wherein:

there is at least one group in which one or more of the bus masters operate cooperatively with one another; and

the arbitration information management section further has a function of managing the bus master arbitration information and the bus arbitration information so as to reflect group information that contains a requested resource access bandwidth for each bus master in each group.

12. (Original) The resource management device of claim 6, further comprising a simulation section for simulating an operation of the data processing system so as to produce group information that stores grouping information of the plurality of bus masters and access

permission percentage information indicating a percentage of access to the shared resource granted to the bus masters of each group.

13. (Original) The resource management device of claim 6, wherein:

the data processing system includes a plurality of shared resources; and

the arbitration information management section further has a function of managing the bus master arbitration information and the bus arbitration information so as to reflect a requested resource access bandwidth for each bus master for each shared resource.

14. (Original) The resource management device of claim 6, wherein the arbitration information management section further has a function of managing the bus master arbitration information and the bus arbitration information so as to reflect a requested resource access bandwidth for each bus master for each purpose of access to the shared resource.

15. (Original) The resource management device of claim 1, further comprising a learning section for, after the arbitration information management section initializes the bus arbitration information, obtaining arbitration results information for a predetermined number of arbitration operations by the bus arbitration section, analyzing a status of access to the shared resource based on the arbitration results information, and instructing the arbitration information management section to update the bus arbitration information so as to reduce a latency in accessing the shared resource based on the analysis.

16. (Original) The resource management device of claim 15, wherein:

a plurality of bus masters are connected to at least one of the plurality of buses, and the at least one bus includes a bus master arbitration section for arbitrating bus requests from the plurality of bus masters; and

the arbitration information management section further has a function of managing bus master arbitration information for an arbitration operation by the bus master arbitration section; and

the learning section further has a function of, after the arbitration information management section initializes the bus master arbitration information, obtaining arbitration results information for a predetermined number of arbitration operations by the bus master arbitration section, analyzing a status of access to the shared resource from the plurality of bus masters based on the arbitration results information, and instructing the arbitration information management section to update the bus master arbitration information so as to reduce a latency in accessing the shared resource based on the analysis.

17. (Original) The resource management device of claim 15, wherein the arbitration information management section has a function of updating at least one of the bus priority order and the highest access priority pattern of the bus arbitration information.

18. (Original) The resource management device of claim 15, wherein the learning section has a function of instructing the arbitration information management section to select one set of bus arbitration information that minimizes an average latency among the plurality of buses, after trying a plurality of sets of bus arbitration information.

19. (Original) The resource management device of claim 15, wherein the learning section has a function of, if a predetermined number or more of consecutive access requests are issued from one of the plurality of buses within the predetermined number of arbitration operations, instructing the arbitration information management section to update the bus arbitration information so as to accommodate the consecutive access requests.

20. (Original) The resource management device of claim 15, wherein the learning section has a function of, if a predetermined number or more of periodic access requests are issued from the plurality of buses within the predetermined number of arbitration operations, instructing the arbitration information management section to update the bus arbitration information so as to accommodate the periodic access requests.

21. (Original) The resource management device of claim 15, wherein the learning section has a function of, if one of the plurality of buses gains access for a predetermined number or more of consecutive times within the predetermined number of arbitration operations, instructing the arbitration information management section to temporarily lower a priority order of the bus.

22. (Original) The resource management device of claim 15, wherein the learning section has a function of, after the predetermined number of arbitration operations are performed based only on the bus priority order, setting the highest access priority pattern so that the highest access priority pattern matches with an order in which the buses gained access in the predetermined number of arbitration operations.

23. (Original) The resource management device of claim 15, wherein the bus master connected to one of the plurality of buses has a structure in which at least one upper bus master is connected to each of a plurality of upper busses.